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| 09/986,936 | 11/13/2001 | Petri Koskelainen | 59864.00635 | 6285 |

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SQUIRE, SANDERS & DEMPSEY L.L.P.
14TH FLOOR
8000 TOWERS CRESCENT
TYSONS CORNER, VA 22182

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| EXAMINER |
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PRIETO, BEATRIZ

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| ART UNIT | PAPER NUMBER |
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2142

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
|--|------------|---------------|
| 3 MONTHS | 02/12/2007 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

09/986,936

Applicant(s)

KOSKELAINEN ET AL.

Examiner

Prieto B.

Art Unit

2142

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 December 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19, 24-43, and new 44-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19, 24-43, and new 44-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/01/06 has been entered.

Claim Rejection under 35 USC 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claims 1, 24, 34 and 44-45 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Regarding these claims, the term "more efficiently" being a relative term, which may render the claim indefinite, has been interpreted in light of the specification. In the context of load balancing and what one of ordinary skill would reasonable appraise regarding this term. To provide a service "more efficiently" will be interpreted as any method, structure, code or system that would reduce or decrease processing execution time, cost utilization or load of computers, processors and other system resources by distributing workload, task or operations amongst operational computers, processors and other system resources.

3. Regarding claims as amended (4/24/06), there is a strong presumption that an adequate written description of the claimed invention is present in the specification as filed, *Wertheim*, 541 F.2d at 262, 191 USPQ at 96; however, with respect to newly added or amended claims, applicant should show support in the original disclosure for the new or amended claims. See MPEP § 714.02, and 2163.06. ("Applicant should specifically point out the support for any amendments made to the disclosure.") (see MPEP § 2163 B (II)).

Specifically, regarding claims 1, 24 and 34 reciting the following clause: "wherein the first server provides the service in a single service stream to each second server to be then

provided from the plurality of client devices redirected to the at least one second server”, the claimed term “single service stream” and/or “stream” has not been found in applicant’s detail description of invention. Thus is not clear how what is the scope or breadth of the term.

According the closest written description to this subject matter, [see par 0041] FIG. 6 shows a diagram of event/notification DST signaling according to an example embodiment of the present invention. A client, 45A, subscribes to a notification service or event with main server 40. Main server 40 decides to redirect this client and finds an additional server 44. Main server 40 creates a URL at additional server 44 if one does not already exist. Main server 40 then sends a SIP 302 Moved message to client 45A. This instructs client 45A to contact additional server 44 for the event subscribed to. Client 45A then sends a SUBSCRIBE message to additional server 44. Additional server 44 responds with an SIP 200 okay message. When new information becomes available related to the event that client 45A has subscribed to, main server 40 sends a NOTIFY message containing the updated information to additional server 44 who may then forward it on to client 45A. Furthermore, [see par 0032] The additional servers may be identified and manually configured in the main server, or found dynamically using known Domain Naming System (DNS) and/or Service Location Protocol (SLP) mechanisms.

Thus, regarding amended claim limitation, “wherein the first server provides the service in a single service stream to each second server to be then provided from the plurality of client devices redirected to the at least one second server”; claim will be interpreted [AS BEST UNDERSTOOD] as wherein the first server provides a communication related to the request to the second server to be then provided to the plurality of client devices redirected to the second server.

Claim Rejections - 35 USC § 103

4. Quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action may be found in previous office action.

5. Claims 1-2, 4-15, 19, 24, 26-34, 36-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arnold et. al. (US 6,167,449) in view of Cardellini, et. al. "Dynamic Load Balancing on Web-Server systems", IEEE (Cardellini hereafter) in further view of Shim, H.S., et. al. An Example of Using Presence and Availability in an Enterprise for Spontaneous, Multiparty, Multimedia Communications, 2001, p. 1-11.

6. Regarding to claimed invention, Arnold teaches, the invention that gives an application an ability to search or browse for network services based on the type of service, rather than having to know the name or location of the service of underlying network communication protocol used by the service. The system includes a network look-up procedure that allows client applications to access SIP servers; including Domain Name Service (DNS) and Lightweight Directory Access Protocol (LDAP), as well as Service Location Protocol (SLP), running on top of the Transport Control Protocol/Internet Protocol (TCP/IP). The system includes interface for receiving request for type of service and queries on of the SIP server, the service type includes DNS, FTP, AFP, Mail and etc. The system includes an interface, which is configured to enable client devices to select and request several types of application form SIP servers, from any receiving request, identifying type of request redirecting request from appropriate type of application from SIP servers, form any domain (DNS) or location of the servers (SLP) including identifying type of request redirecting request from appropriate type of service in accordance with the request are implicitly disclose by Arnold, see abstract, and col. 3, lines 23-col. 4, lines 1-25. Although Arnold redirects the request to an appropriated service, he does not explicitly teach where this selection is based on the client device location.

Cardellini discloses determining to identify a server to provide the services to be provided to a plurality of client devices on the basis of the determined location of each of the plurality of client devices, thus determining to identify at least one other server to provide to at least some of the plurality of client devices based on the location thereof. Specifically, redirecting clients from a service server (e.g. DNS server) to a second server of a plurality of servers (Server₁ ... Server_N) based on client location and each of the plurality of server loads (p. 30), where the first server selects on the basis of state information including client location, server load or a combination (p. 30), wherein client state information includes client's

geographical location including identifying the requesting domain (p. 31), the first server (i.e. DistributedDirector) acting as a primary server determines the most suitable server on the basis of relative client-to-server topological proximity (p. 30), using server availability/load along with client proximity (p. 30).

It would have been obvious to one of the ordinary skill in the art at the time of invention given the teachings of Rosenberg for generating services list that may be a hierarchy of types of network services or geographic locations of providers of the type of service requested on the network to which the computer system is connected, one would be motivated to consider the location of the client devices with respect to the locations of the server as well as the load thereon because in doing response time and server load congestion is reduced, as suggested by Cardellini. Furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Cardellini because in using state information, the system can exclude servers that are currently unreachable because of fault or congestion conditions, combined with state collection information in the form of feedback effectively avoids system overload, as suggested by the reference. The adaptive scheme further adequately addresses client request skew and probable heterogeneity of server capabilities, a further indicated by the reference

However the above-mentioned prior art do not explicitly teach where the first server provides information related to the service to a second server from which some of the plurality of client devices get the service from.

Shim et. al. teaches a method for setting up and managing services (e.g. spontaneous services) in single stream (i.e. streamlined) (section 4 on p. 7) that utilize SIP methods, where Fig. 7 illustrated the communication between the clients and servers;

receiving a request for a service at a first (CC) server from a client device (user_A); identify at least one second server (e.g. MTCU or MCU) to provide the service to at least some of the plurality of client device (e.g. User A & User B); creating a resource identifier at the at least one second server (e.g. a URL and service identifier); and redirecting the at least some of the plurality of client devices to get the service from/at the at least one second server, wherein the first server provides the service notification in a communication to the at least one second

server to be then provided for the at least some of the plurality of client devices redirected to the at least one second server (Fig. 7 on p. 7).

It would have been obvious to one of ordinary skill in the art at the time the invention was made given the suggestion of Arnold for utilizing SIP server to utilize the teachings of Shim. One would be motivated to utilize presence and availability information particularly in the collaboration environments discussed by Shim, such supporting the transfers of in a conferencing service.

7. Regarding claims 8-9, 30-31, and 40, web browsers (Arnold col 1/lines 52-56, col 4/lines 17-26), SIP servers (Arnold col 3/lines 35-39), INVITE message (Shim, Fig. 7), SUBSCRIBE message (Shim p. 6).

8. Claims 3, 16-18, 25 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arnold-Rosenberg in view of Cardellini, as applied to claims directly above, and further in view of Ahuja et al. 6,175,869.

Ahuja et al teaches a technique for server allocation, which includes dispatch mechanisms for dispatching request to servers based on the servers load (col. 1, line 38-col. 2, line 13; col. 2, lines 42-col. 3, line 20 and col. 4, line 64-col. 6, line 67).

It would have been obvious to include such mechanisms of notion of mechanisms with Arnold in view of Rosenberg for redirecting clients request base of server work load in order to balance load to improving network service efficiency.

9. Regarding added claims 41-43, wherein the particular location comprises a domain where the clients are located (see Cardellini, identifying the requesting domain, considering client/domain location on p. 31).

10. Regarding added claims 44-45, these claims comprise the apparatus comprising each unit associated with the limitation of the method claim 1 and the apparatus comprising the means associated with the limitation of the method of claim 1, respectively, thus the same rationale of rejection is applicable.

Response to Arguments

11. Regarding claims 1, 24 and 34 applicant argues that the applied references do not providing services in a single service stream, as supported by Fig 5, shows "ONE LINK".

Specifically (p. 15 of remarks), indicating that "Figure 5 shows a diagram of a created distributed server tree, where there is one link from SIP server 40 to SIP server 44 and SIP server 42, respectively, and multiple links from SIP server 44 to clients 45A- 45D and from SIP server 42 to clients 46A-46C. Therefore, Applicants submit that a "single service stream" is supported by Applicant's disclosure."

In response to the above-mentioned argument, Applicant's interpretation of instant invention has been fully considered. In this case, according to the written description of Figure 5:

[0039] FIG. 5 shows a diagram of a created DST according to an example embodiment of the present invention. Now a small distributed server tree, that includes SIP server 40 at orange.com and SIP server 44 at Nokia.com, has clients 45A-45D that have been redirected to SIP server 44. SIP server 40 may also create additional branch servers, e.g., SIP server 42, and redirect clients to SIP 42, i.e., clients 46A-46C. Main SIP server 40 controls the DST and sends notifications to SIP servers 42 and 44 to be retransmitted to clients 45A-45D and 46A-46C. A NOTIFY message may be used for this purpose and may include a "To" field, an "Event" field, a "Content-Type" field, and other information (e.g., the update information).

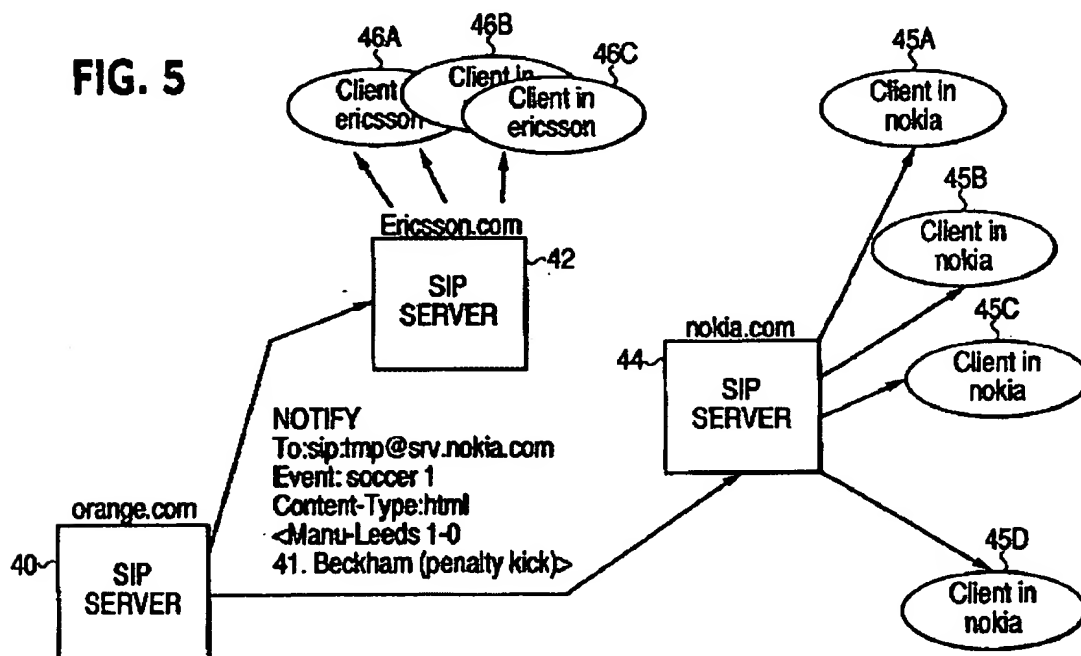
[0040] As discussed previously, a main SIP server may find other servers dynamically using DNS and/or SLP. Moreover, a main SIP server may also have access to a list of known servers that may be used if needed. According to the present invention, any SIP application server may be a main SIP server and initiate the creation of a distributed server tree. In addition, the present invention may be applied to event notification (e.g., notifying clients of sporting event updates, current news item updates, financial information updates such as stocks, etc.), or applied to group communications (e.g., group chat rooms, conference calls, etc.). In the latter application (group communications) an SIP SUBSCRIBE and SIP NOTIFY request may not be necessary, only SIP INVITE messages.

Figure 5 shown below has been reviewed, however what applicant denotes as "ONE LINK" seems to be arrows. Applicant seems to want to "ARROWS" to be equated to "LINKS"

However, Figure 5 is a Diagram where the clients are represented as ELLIPSES e.g. 46A-C and 45A-D and SIP servers are represented as RECTANGLES (e.g. 40, 42 and 44). The written description (provided above) again has been reviewed. However, it recites

“SIP server 40 at orange.com and SIP server 44 at Nokia.com, has clients 45A-45D that have been redirected to SIP server 44.”, the figure shows no “a single service stream” from SIP server 40 to SIP server 44, the figure does not show “one link”, it shows an ARROW.

“SIP server 40 controls the DST and sends notifications to SIP servers 42 and 44 to be retransmitted to clients 45A-45D and 46A-46C”, the figure shows no “a single service stream” from SIP server 40 to SIP server 44, the figure does not show “one link”, it shows an ARROW.



Applicant's argument that figure 5 which shows a diagram of a created distributed server tree, where there is **one link** from SIP server 40 to SIP server 44 and SIP server 42, respectively, and multiple links from SIP server 44 to clients 45A- 45D and from SIP server 42 to clients 46A-46C has been fully considered but not found persuasive.

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12. Regarding claims 1, 24 and 34 applicant argues that the applied references do not providing services in a single service stream, as supported by Fig 5, shows "ONE LINK".

In response to the above-mentioned argument, applicant's attempt to equate an "ARROW" to "ONE LINK" and further to equate that to a "SINGLE SERVICE STREAM" has been considered.

The term "LINK" is a communication channel/circuit (see definition as per IEEE dictionary, Authorative Dictionary of IEEE standards terms, 7TH ed 2000) or path or link through which information passes between two devices.

The term "STREAM" is an order or sequence of characters, typically transmitted as frames or packets. (see Authorative Dictionary of IEEE standards terms, 7th ed 2000).

Thus, if applicant's assertion is applied and an arrow is a link and a single service stream is a link, thus this means that *the single service stream passes through itself?*

As previously indicated (advisory mailed 9/21/06) one link is not equivalent to a single service stream" because multiple streams ~~may~~^{can} be conveyed on one link.

The terms "link" and "stream" have been reviewed. According to the specification, these 10,000 event notifications may possibly be sent over the same backbone links [see par 0008]. This means that these web pages have to respond often with internal server error as network links are often congested causing packet drops (which makes TCP slower for the client) [see par 0010]. [0035] Therefore, in a distributed server tree according to the present invention, the load on each SIP application server is reduced, there is less traffic over each server link, there is faster response time for clients (i.e., they get notification faster), and the system is fairer since all clients may receive service (e.g., notifications) at approximately the same time because there are not as many users/clients directly serviced by main SIP application server 10 [see 0035].

The claimed term "single service stream" has been considered in view of the specification, however, as previously indicated (office action mailed 7/20/06) the claimed term "single service stream" does not appear in applicant's disclosure. The claimed term "stream" has been considered in view of the specification, however, the term "stream" does not appear in applicant's disclosure.

The description is a dictionary for the claims and should provide *clear support or antecedent basis for all terms used in the claims*. See 37 CFR 1.75, MPEP § 608.01(i), §

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608.01(o), and § 1302.01. According to 37 CFR 1.75 claims (d) (1) claims must find *clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertainable by reference to the description* (See § 1.58(a)).

13. Applicant's arguments that an "ARROW" in Figure 5 represents "ONE LINK" and that one link is equated to a "SINGLE SERVICE STREAM" has been considered but not found persuasive.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Prieto, B. whose telephone number is (571) 272-3902. The Examiner can normally be reached on Monday-Thursday from 5:30 to 2:00 p.m. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's Supervisor, Andrew T. Caldwell can be reached at (571) 272-3868. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3800/4700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system, status information for published application may be obtained from either Private or Public PAIR, for unpublished application Private PAIR only (see <http://pair-direct.uspto.gov> or the Electronic Business Center at 866-217-9197 (toll-free).

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(571) 272-2100 for TC 2100 Customer Service Office.


BEATRIZ PRIETO
PRIMARY EXAMINER